SEAFORD BRIDGE (State Bridge No. 151)
Spanning the Nanticoke River on Front Street (Rd. 13)
Seaford
Sussex County
Delaware

HAER No. DE-33

HAER
DEL
3-SEFO,
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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
Northeast Region
U.S. Custom House
200 Chestnut Street
Philadelphia, PA 19106

HAER
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3-SEFO,
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HISTORIC AMERICAN ENGINEERING RECORD

SEAFORD BRIDGE (State Bridge No. 151)

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Location: Spanning the Nanticoke River on Front Street (Rd. 13) 1 mile west of the intersection of High Street and U.S. 13 between the towns of Seaford and Blades, Sussex County, Delaware

UTM 18.450180.4267800
Quad: Seaford, Del.

Date of Construction: 1925

Engineer: Chicago Bascule Bridge Company

Present Owner: Delaware Department of Transportation

Present Use: Vehicular traffic

Significance: State Bridge Number 151 is the only trunnion bascule bridge inventoried in Sussex County. The trunnion bascule differs from the rolling lift in that the entire weight of the leaf and counterweight are placed in a pit below the deck within the bascule pier. Bridge 151 in considered eligible for the National Register.

Project Information: This document was undertaken in August 1991 in accordance with the Memorandum of Agreement by the Federal Highway Administration as a mitigative measure prior to rehabilitation of the bridge and replacement of the bridge operator's house.

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Constructed as a riverine crossing elimination, the Seaford Bridge 151 carries Front Street (Road 13) over the Nanticoke River between the towns of Seaford and Blades in Sussex County, Delaware. State Bridge Number 151 (Seaford Bridge) is one of two bascule bridges inventoried in Sussex County. The Seaford Bridge is significant because of its locational history and because it is the only extant trunnion bascule of the patented Chicago type.

The main span of the Seaford Bridge is a single leaf through plate girder trunnion bascule bridge, of the Chicago type. The total structure length is 224' with a main span length of 55' and a clear waterway of 40'-9". The approach spans are concrete T-beam spans measuring 33'. The roadway is 24'-0" wide with 5'-0" sidewalks on either side. Ornamental, open concrete balustrades run the length of the bridge (except at the bascule span) with four lamp posts on either side setting on slightly larger posts. The bridge is powered by a KHP motor and the counterweight consists of 305,000 pounds of composition concrete with 12,000 pounds of adjusting blocks. All machinery is concealed below the road in the bascule pier. There is an operators house which is attached to the bridge at the north end of the bascule span.

State Bridge 151 was constructed in 1924 and 1925. Original drawings and notes, dated 1923 and 1924, indicate that the bridge construction was authorized by Congressional Act SB 4346 on February 15, 1923 and that a War Department permit was issued June 30, 1923. The need for federal approval is standard procedure for bridges over navigational waters.

The Seaford Bridge replaced a steel and timber swing span on the same location; a temporary fixed timber bridge was erected to accommodate traffic during construction. The bridge was completed and recommended for acceptance in March 1925. Improvements were made in 1951; these included the replacement of the original wood deck with a steel floor.

The Seaford Bridge also had rehabilitation work in 1967 for cleaning, repair and painting and miscellaneous bridge repairs to structural steel and painting in 1982-83 as well as a new timber sidewalk (part of a statewide contract).

The present appearance of the Seaford Bridge indicates the need for replacement of the parapet, deck, navigational wiring and switches, the fender systems in the channel and the bridge operator's house due to deterioration. Beneath the deck, the counterweight requires patching, specific problems include spalling of abutments and pier walls, exposure of concrete footings for the abutment, and 2"-3" separation of the wingwall from the abutment, and scour of the piers and fender system. In addition, the bridge operator's house shows obvious deterioration inside with all woodwork rotting, including timbers, floor and ceiling joists; severe damage to windows which are missing wooden members and panes; walls with peeling paint and spalling plaster; obsolete electrical wiring and no sanitary facilities. Thus, the present condition of the bridge operator's house which is structurally deteriorated, and functionally obsolete, renders a bui
lding which is unsafe, unsound and beyond rehabilitation.

Bids for the substructure were received on December 19, 1923, and the contract was executed on January 8, 1924 with Imbach-Wozny-McCoy, Inc., of Baltimore, for the bid price of $69,447.00. Delaware records indicated that Henry G. Tyrell, noted bridge engineer and historian, was associated with this firm as consulting engineer at that time. Bids for the superstructure were received on April 9, 1924, and the construction contract was signed with Al. S. Fox on May 6 for $29,690.00. The bascule bridge was designed by the Chicago Bascule Bridge Company, Hugh E. Young, President, patent holders for the Chicago type bascule which is shown below. Upon completion in 1925, it was inspected by C. L. Keller, principal in the firm of Keller & Harrington; Keller wrote to A. G. Livingston, Bridge Engineer for the State Highway Department, that the construction was "well executed and is very satisfactory". Keller & Harrington designed the bascule bridges at Milford (Bridge 21A), and Newport (Bridge 159), both constructed in 1929. A bridge operator's house was also constructed at the Seaford Bridge in 1925.

State Bridge Number 141 is the only trunnion bascule bridge inventoried in Sussex County. The trunnion bascule differs from the rolling left in that the entire weight of the leaf and counterweight is carried by the trunnion and trunnion bearings, located approximately at the center of gravity of the mass; in some cases, the machinery and the counterweight are placed in a pit below the deck within the bascule pier. Bridge 151 is considered eligible for the National Register.

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Plans on file at Delaware DOT: Contract #42B and #42C.